



TENNESSEE ALTERNATIVE PERFORMANCE BASED ASSESSMENT (APBA)

STUDENT* _____ DOB _____

COURSE _____

TEACHER _____

End of Course score _____ Date End of Course Administered _____

Percent/Adjusted Score Based On Alternative Performance Based Assessment _____

I certify that the above named student ☐ has ☐ has not demonstrated through state allowable evidence the essential knowledge and skills for the above named course.

Teacher signature

Date

**Note – Only students with disabilities on an active IEP are eligible for participation in the APBA*

Physics Rubric

Standard	Physics Essential Knowledge and Skills	Method of Assessment *See Key	0 = No Evidence 1 = limited Evidence 2 = Proficient or Above
			Rating from 0 to 2
1.0 Mechanics	1. Predict the motion of objects on the earth both rectilinear and angular based on an understanding of Newton's Laws of motion.		0 1 2
	2. Plot and analyze rectilinear and angular motion data to determine the motion of an object.		0 1 2
	3. Demonstrate an understanding of the Law of Conservation of Energy by approximating energy transfer within a mechanical system and relate this concept to the development of more energy efficient machines.		0 1 2
	4. Illustrate an understanding of the gas law by plotting and analyzing pressure, volume, and temperature data.		0 1 2
	5. Demonstrate an understanding of Archimedes' Principle by predicting displacement and buoyant forces determined by the density of objects and the density of water.		0 1 2
	6. Predict the changes in pressure within a system based on knowledge of Pascal's and Bernoulli's principles, and use this understanding to explain the historical advancement of aerospace technology.		0 1 2
	7. Illustrate problem solving skills associated with kinematic and fluid equations.		0 1 2
2.0 Thermodynamics	8. Demonstrate an understanding of the principles of thermodynamics by predicting heat transfer within a system.		0 1 2
	9. Demonstrate an understanding of the second law of thermodynamics by interpreting pressure, volume, temperature graphs with respect to the Carnot engine.		0 1 2
	10. Illustrate problem solving skills associated with specific heat, heats of fusion and vaporization, and thermal expansion.		0 1 2
	11. Explain how thermodynamic principles and materials research have contributed to the development of more energy efficient engines.		0 1 2
3.0 Waves	12. Demonstrate an understanding of oscillating systems (Hooke's Law).		0 1 2
	13. Describe a wave interaction as reflection, refraction, diffraction, or interference.		0 1 2
	14. Analyze the wavelength, frequency, period, and amplitude of longitudinal and transverse waves.		0 1 2
	15. Illustrate problem solving skills associated with Doppler shift, wave velocity, period, frequency, and Hooke's Law.		0 1 2
4.0 Optics	16. Illustrate knowledge of the electromagnetic spectrum by differentiating between energy types and wavelength to frequency relationships.		0 1 2
	17. Predict the image location, and magnification based on mirror or lens type by drawing ray diagrams and explain how this knowledge has been used to improve the quality of life.		0 1 2

Physics Rubric

Standard	Physics Essential Knowledge and Skills	Method of Assessment *See Key	0 = No Evidence 1 = limited Evidence 2 = Proficient or Above
			Rating from 0 to 2
4.0 Optics (Cont.d)	18. Demonstrate knowledge of how additive and subtractive properties of light determine the color of objects.		0 1 2
	19. Illustrate problem solving skills associated with focal length, magnification, and Snell's Law.		0 1 2
5.0 Electricity and Magnetism	20. Demonstrate knowledge of electric charge, electric force, electric field, magnetic poles, magnetic fields, and electromagnetic induction and show how these principles are associated with advancements in the electronics industry.		0 1 2
	21. Compare and contrast series and parallel circuits with respect to voltage, current, and resistance.		0 1 2
	22. Illustrate problem solving skills associated with Ohm's law, Coulomb's law, and circuit formulas.		0 1 2
6.0 Nuclear Physics	23. Describe atomic structure in terms of the quantum theory.		0 1 2
	24. Differentiate among the three types of nuclear decay and describe their relationship to transmutation and transuranium.		0 1 2
	25. Use the concepts of coherent light to explain the development and application of laser technology and data storage.		0 1 2
	26. Compare and contrast nuclear fission and nuclear fusion and describe the social and political ramifications of nuclear energy.		0 1 2
	27. Illustrate problem solving skills associated with half life, radioactive decay, radiocarbon dating, and nuclear reaction equations.		0 1 2
*Method of Assessment Key 1. Use of routine classroom tests and/or assignments 2. Projects 3. Oral response 4. Written response 5. Use of technology 6. Other		TOTAL POINTS _____ Percentage = <u>Total Points</u> _____ % 54	
Statement of Assurance (REQUIRED): As the teacher of record, I attest that I have reviewed and evaluated the evidence that supports each rating and the percent score.			
_____ Signature		_____ Date	